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PROPOSED REMEDIAL ACTION PLAN

Hranica Landfill

Buffalo Township

Butler County, Pennsylvania

February, 1994

INTRODUCTION

The United States Environmental Protection Agency Region III ("EPA") has identified a "No Action" Preferred Alternative for addressing **ground water** at the Hranica Landfill Superfund Site ("the Site") located in Buffalo Township, Butler County, Pennsylvania. The identification of this "No Action" Preferred Alternative is based on the recently completed Ground Water Verification Study Report for Operable Unit #2 (OU2).

In a **Record of Decision** ("ROD") issued in June of 1990, EPA divided the Site into two Operable Units. Operable Unit #1 (OU1) is the onsite contaminated soils, and OU2 is the onsite and offsite ground water. Before the selection of a final remedial alternative for OU2, EPA will consider written and oral comments on the Proposed "No Action" Alternative presented in the Proposed Remedial Action Plan (Proposed Plan). EPA, the lead agency, in consultation with the Pennsylvania Department of Environmental Resources (PADER), the support agency, will make its final selection of a remedy for the Site in the ROD. The public's comments will be incorporated in the Responsiveness Summary contained in the ROD for the Site.

PUBLIC PARTICIPATION

This Proposed Plan for the Site has been prepared by EPA to facilitate public participation in the decision-making process regarding further remediation of the Site. The Proposed Plan (1) fulfills the public notification requirements of Sections 113(k)(2)(B), 117(a), and 121(f)(1)(G) of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. §§9613(k)(2)(B), 9617(a), and 9621(f)(1)(G); (2) identifies EPA's preferred No Action Alternative and explains why the EPA prefers it; (3) solicits community involvement in the selection of the remedy; and (4) refers interested parties to the Ground Water Verification Study Report and other site-related documents contained in the **administrative record**. Copies of the administrative record file are located in the **information repositories** at the Buffalo Township Municipal Building,

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109 Bear Creek Road, Sarver, Pennsylvania, and at the EPA Region III offices in Philadelphia, Pennsylvania.

EPA and the Commonwealth of Pennsylvania encourage the public to review and comment on the Preferred "No Action" Alternative, the Proposed Plan, and other documents comprising the administrative record file. Interested parties may comment during a public comment period which begins on February 25, 1994 and closes on March 26, 1994. Written comments must be post marked no later than March 26, 1994. On March 8, 1994, a public meeting to discuss the "No Action" Alternative will be held at 7:00 PM in the Buffalo Township Building in Sarver, Pennsylvania.

During the public comment period, the public is encouraged to submit comments on the Proposed Plan, and the administrative record file to EPA. EPA, in consultation with the Commonwealth of Pennsylvania, may modify the Preferred Alternative, select another response action or develop another alternative, if public comment warrants such action, or if new material is presented. A glossary explaining terms that may be unfamiliar to the general public is attached to this Proposed Plan. The terms in **bold print** in the text are defined in the glossary.

SITE BACKGROUND

A. Site Name and Location

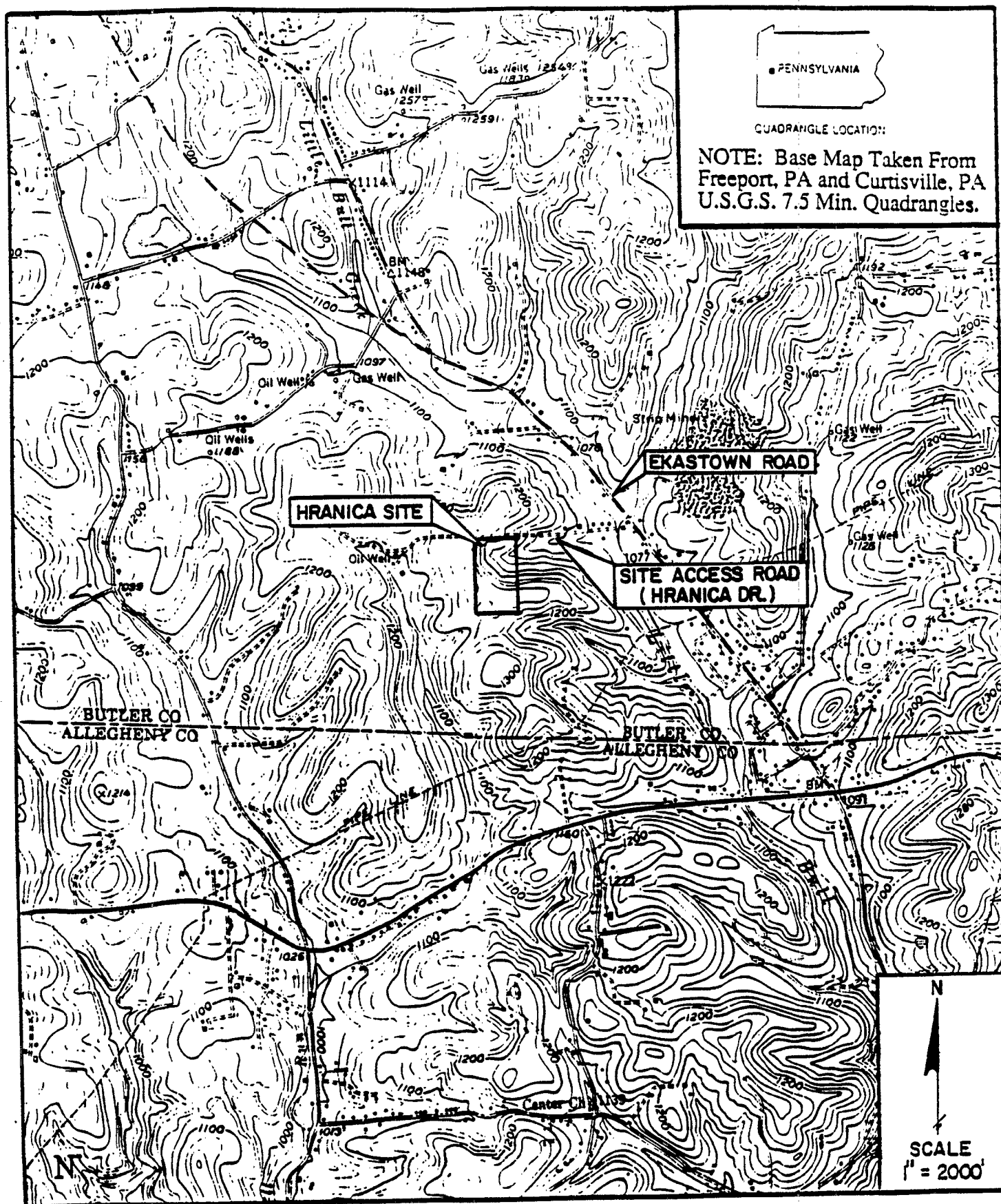
The Hranica Landfill Site comprises 15 acres, and is located approximately 21 miles north of Pittsburgh and just south of the village of Sarver on Ekastown Road, Buffalo Township, Butler County, Pennsylvania (Figure 1). The Site was used as a landfill, drum disposal, and incineration facility.

The Site is surrounded by orchards, corn fields, and wooded areas. Buffalo Township covers 23.9 square miles and has a population of approximately 6,600 people. It is estimated that 1,000 people reside within a one-mile radius of the Site, 4,000 people reside within a two-mile radius, and 10,000 reside within a three-mile radius. The nearest offsite, private drinking well is approximately 2,000 feet from the Site boundary.

B. Site History and Enforcement Activities

Between 1966 and 1974, William Hranica and his brother, Joseph, owned and operated the facility, which accepted both municipal and industrial wastes. Initially, the wastes were treated by a combination of incineration and surface impoundment storage. Incineration of waste was halted at the request of the Butler County Health Department in April, 1974. Subsequently, William Hranica disposed of the liquid waste by direct discharge into surface impoundments with resultant ground surface and soil cover infiltration. After five weeks of surface impoundment

FIGURE 1



practices, organic contamination was detected in a spring on an adjacent property by the property owner. The surface impoundments were abandoned, and the wastes were then openly burned in large metal vats. The residual ash from the incineration was stored in unprotected piles on the Site, and numerous drums of unprocessed waste were staged without further treatment.

In April 1981, a Site Investigation was performed by a Field Investigation Team under contract to the EPA. The results of **surface water** samples, including spring discharges and landfill seepage, collected during this investigation indicated the need for further study. A Preliminary Investigation at the Site conducted by PPG Industries, Inc. (PPG) also confirmed the presence of contamination.

The Site Investigation Report indicated that the Hranica Site received paint and solvent wastes from the PPG plant in Springdale, Pennsylvania, and from the PPG Research and Development Center in Allison Park, Pennsylvania. The Hranica facility also received plating wastes, metal sludges, and waste oils from the Aluminum Company of America (ALCOA) facility in Logans Ferry, Pennsylvania.

The Hranica Site was listed on the EPA's **National Priorities List** (NPL) on September 8, 1983. After the Site's inclusion on the NPL, PPG and ALCOA contracted D'Appolonia Waste Management Services, Inc. to perform removal activities at the Site. The removal activities were financed by ALCOA and PPG, and were done according to a Consent Agreement with PADER. These activities were performed during 1983 and 1984 and involved the removal and ultimate disposal of more than 19,200 drums and 4,000 cubic yards of visibly contaminated soil. Three large tanks containing oils and paint sludges were also emptied, and their contents were incinerated at an offsite disposal facility. The incinerator ash was then consolidated into a 2.5-acre area located at the southern portion of the Site. After these activities were completed, part of the Site was capped with natural clay, graded, and revegetated to prevent or minimize infiltration, storm runoff, and erosion.

Following the completion of these removal activities, additional testing of the ground and surface water was performed by Earth Science Consultants (ESC) for PPG. The collected data were summarized by International Technology Corporation (IT) in a Comprehensive Site Investigation Report, dated January 30, 1987, and then revised July 27, 1987. The results of this investigation indicated residual contamination was still present at the Site. Therefore, EPA and PPG entered into a Consent Order on March 13, 1987 requiring that PPG conduct a Phase II Comprehensive Site Investigation, deemed to be equivalent to a Remedial Investigation (RI), an Endangerment Assessment, and a

Feasibility Study for the Site.

On September 10, 1987, PPG contracted Dunn Geoscience Corporation (DUNN) to prepare the RI and an **Endangerment Assessment** (EA). The RI/EA Report was submitted to EPA and PADER in September of 1989. Based on comments received from EPA and PADER, the RI Report was revised two separate times and was resubmitted on January 15, 1990, and April 10, 1990. A new EA Report, dated January, 1990 was submitted to EPA and PADER by IT. Finally, a Feasibility Study (FS) Report, dated February 1990, was submitted to the EPA and PADER by Remcor, Inc. on behalf of PPG. The FS Report was revised in accordance with comments received from the EPA and PADER, and it was resubmitted in May 1990.

A ROD for the OU1 was signed on June 29, 1990. OU1 addressed the remaining contaminated soils. The ROD called for an eight-foot fence around the entire perimeter of the Site to prevent trespassing. A long-term ground water **monitoring** program of both on- and offsite wells was another component of the remedy. The most significant component of the ROD was a soil cover, consisting of two-feet of clay and one-foot of topsoil which was to be placed on top of the remaining areas of PCB- or lead-contaminated soils. Deed restrictions to prevent the soil cover from ever being disturbed and to prevent the development of wells onsite was the final component of the OU1 ROD.

A Consent Decree to perform the Remedial Design and Remedial Action (RD/RA) for OU1 was signed by ALCOA and PPG in June of 1991. The Remedial Design was started in February, 1992 and the Final Design was approved on March 17, 1993. The Remedial Action began in June, 1993 and was completed in September, 1993. The Site is now completely fenced, and a Consent Decree with the property owner to record the deed restrictions has been signed. Approximately 3000 truckloads of soil were placed onsite during the Remedial Action. A five-acre soil cover was placed on the former disposal area and the adjoining hillside. This soil cover has also been graded and seeded.

GROUND WATER VERIFICATION STUDY

The primary objective of the verification study was to gather sufficient ground and surface water data at the Site and the surrounding vicinity to assess the need for remediation, if any, of the ground water. Onsite monitoring wells, as well as offsite residential wells were sampled for four consecutive quarters. Other objectives of this study were to evaluate variations in water quality, to select monitoring wells for the long-term ground water monitoring program, and to provide information necessary for the design and placement of additional long-term monitoring wells if required.

The verification study was performed during the period of April 1992 through January 1993, as outlined in the RD work plan. The study consisted of four rounds of sampling and analysis spaced three months apart. Sampling was done in all four seasons of the year, and samples were collected from existing onsite ground water monitoring wells, onsite and offsite surface water (i.e., streams, ponds, seeps, and springs) locations, and nearby domestic wells as described in Table 1. The sample locations were generally the same as those used during the RI for OU1. The sampling program was designed to account for the seasonal ground water fluctuation and discharge from ground water systems in response to the relative amounts and rates of recharge.

A. GROUND WATER MONITORING WELL SAMPLING

Only eight of the ten cluster wells installed in 1988 and three of the shallow wells installed in 1982 contained sufficient water to obtain samples. No additional wells were drilled for this ground water verification study. Ground water monitoring wells MW-1S and MW-2D were not sampled because they were either dry or had an insufficient amount of water to perform sampling. Therefore, 11 of the 13 existing ground water monitoring wells were sampled during each round. The ground water appears to be most affected in the perched water directly underneath the former ash pit area (See Figure 2). The water in this perched zone is not used as a water supply; the residents around the site are either connected to a public water supply or utilize a deeper, more productive aquifer for their water. Onsite monitoring wells situated within the intermediate and deep aquifer systems seasonally exhibit low concentrations of a few contaminants. Contaminants detected included toluene, xylene and ethylbenzene.

B. DOMESTIC WELL SAMPLING

Subsequent to performance of the RI, the local municipality installed water lines along Ekastown Road; therefore, some of the homeowners removed their wells from service (e.g., DW-3,). Four of the five domestic wells were accessed and sampled during the verification study with three wells (i.e., DW-2, DW-4, and DW-5) being sampled a total of three rounds each. Alternate domestic well sample locations which would provide relevant data were evaluated but could not be found due to current availability of the municipal water supply. Prior to purging, any residential water purification and/or softening equipment was disengaged. Domestic ground water adjacent to and downgradient from the Site do not display any statistically significant contamination.

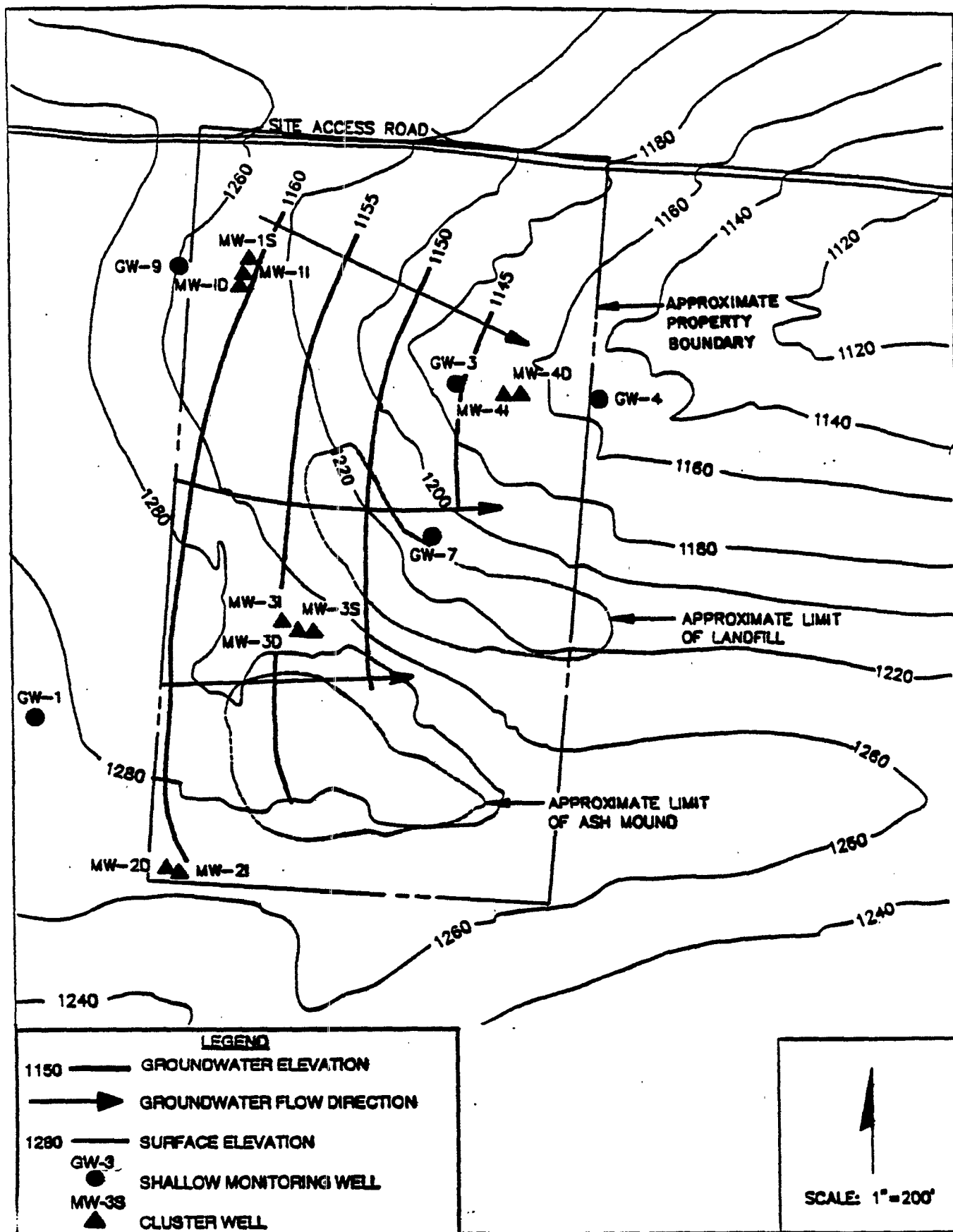
C. SURFACE WATER SAMPLING

All of the 14 surface water locations were sampled during each of the four rounds. Surface water includes streams and ponds, as well as spring and seep discharges at a variety of

Table 1
Sample Location Descriptions
Verification Study
Hranica Landfill Site
Butler County, Pennsylvania

Sample Identification	Location
DW-1	113 Hranica Drive - well at outside spigot
DW-2	Lonesome Hollow Lane off Howes Run - well at kitchen sink
DW-4	143 Harvey Road - well at kitchen sink
DW-5	238 Ekastown Road - well at outside spigot
GW-3, 4, and 7	Pre-existing shallow monitoring well
MW-1S, 1I, and 1D	Cluster Well Set 1
MW-2I and 2D	Cluster Well Set 2
MW-3S, 3I, and 3D	Cluster Well Set 3
MW-4I and 4D	Cluster Well Set 4
SW-1	Spring box (120-A Hranica Drive)
SW-2	Intersection of ravine with unnamed tributary of McDowell Run
SW-3	Upstream of SW-2
SW-4	Upstream of SW-3
SW-5	Upstream of SW-4
SW-6	Ponded water near Cluster Well Set 1
SW-7	spring house
SW-8	spring (i.e., square reservoir)
SW-9	pond
SW-10	Oak tree seep on adjacent property
SW-11	Unnamed tributary of Little Bull Creek
SW-12	Spring at sink in Ashland service station (264 Ekastown Road)
SW-13	Little Bull Creek at bridge (288-A Ekastown Road)

FIGURE 2



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locations near the Site. Surface water samples were collected using random grab sampling techniques. The procedure for stream sampling consisted of beginning at the farthest downstream location and proceeding upstream. Spring and seep samples were obtained from natural surface discharge points. Static water bodies were sampled from the bank so as not to disturb the sediments. Surface water samples from streams and ponds adjacent to and downgradient from the Site do not display any site-related contamination.

RISK ASSESSMENT

The scope of the **Risk Assessment** was limited to addressing the human health risks related to potential use of contaminated water by offsite residents downgradient of the landfill. The results from the four deep wells, which were used for the Risk Assessment, are described in Table 2. The Risk Assessment is therefore considered focused, in that only the ground water pathway, and not other potential exposure pathways, was evaluated and quantified.

The scenario actually addressed in the Risk Assessment was potential future use of potable water supplies that may become contaminated by the migration of landfill constituents in the ground water. An exposure pathway is the course that a hazardous agent takes from a source to a receptor via environmental carriers or media. An exposure route is how the transfer occurs, i.e., by inhalation, ingestion or dermal contact. For an exposure pathway to be complete it must consist of four elements: (1) a source and release mechanism, (2) a transport medium for released contaminants, (3) a point of contact with the contaminated medium, and (4) intake routes at the point of contact by a receptor.

The main contaminants of concern in the ground water at this Site are lead, and three **volatile organic compounds**, benzene, xylene and toluene. Benzene is by far the most dangerous of the organic compounds. Carcinogenic and non-carcinogenic risks presented by these contaminants were calculated for the ground water pathway. Risks were calculated both for current uses and potential future uses of the property by a defined population (i.e., offsite residents).

Excess lifetime cancer risks for the Site were determined by multiplying the daily intake of chemicals from the ground water pathway by the cancer potency factors. These risks are probabilities expressed in scientific notation (i.e., 1E-6). An excess lifetime cancer risk of 1E-6 indicates that an individual has a one in a million chance of developing cancer as a result of site-related exposure to a **carcinogen** over a 70-year lifetime. The EPA recommended upper bound for lifetime cancer risks is between 1E-4 and 1E-7. However, the point of departure, as

Table 2

Summary of Ground Water Study's Analytical Results

CONTAMINANT OF CONCERN	MAXIMUM CONTAMINANT LEVEL (MCL)	95% UCL DETECTED AT HRANICA	FREQUENCY OF DETECTION
BENZENE	5	2.5	3/8
* LEAD	N/A	30.9	8/11

All concentrations are expressed in parts per billion (ppb).

The 95% Upper Confidence Limit (UCL) is derived from the mean, or average concentration of a contaminant actually detected in the ground water at the Site. The 95% UCL exceeds the true mean or average sample 95% of the time, and is therefore a conservative estimate of the mean.

*Lead doesn't have an MCL, but it was evaluated using a Biokinetic Uptake Model. The Model was used to estimate the potential impacts to children that could result from ingestion of lead reported in the ground water at the Site. The risks to these offsite residents from lead via the ground water pathway appear to be within the range normally considered acceptable.

described in the **National Oil and Hazardous Substances Pollution Contingency Plan** (NCP), is considered to be $1E-6$. Cancer risks from the ingestion of contaminants in the groundwater were estimated at $9.77E-7$ which is slightly less than one incremental cancer case per 1,000,000 population.

As to the non-cancer effects, the calculated **Hazard Index** (HI) for both adult and child residents was zero. An HI greater than 1.0 is characterized as presenting an unacceptable noncarcinogenic risk. The HI is the measurement expressing the overall potential for noncarcinogenic effects posed by contaminants. The HI is the ratio between the average daily dose of a contaminant received by a human population and the reference dose. **Reference doses** have been developed by EPA for indicating the potential for adverse health effects from exposure to chemicals exhibiting noncarcinogenic effects. In conclusion, the risks associated with the ground water pathway are within an acceptable range, less than 1.0, and ground water remediation is not necessary.

DESCRIPTION OF THE "NO ACTION" PREFERRED ALTERNATIVE

Under the "No Action" Alternative, EPA will not undertake any type of remedial action as there are no remaining Site-related risks which would warrant EPA to implement a remedial action. The previous removal and remedial actions, which were completed by contractors working for ALCOA and PPG, have remediated the Site so that the residual risk posed by the Site is below health-based standards and therefore does not warrant any further remedial action. However, as there is evidence of low-level concentrations of **organic compounds** remaining in the onsite monitoring wells, EPA will still review the Site within five years in accordance with CERCLA § 121(d) to assure that changes have not occurred which would pose a risk to human health or the environment. In order to facilitate this review, a ground water monitoring program will be implemented, as stated in the ROD for OU1, to enable EPA to meet this requirement and to ensure Site conditions do not change so as to pose an unacceptable risk. Ground water **monitoring** will begin in the Spring of this year and will be done twice a year for the next five years. A total of ten rounds of data will therefore be collected prior to the five year review.

The Commonwealth of Pennsylvania has expressed the opinion that the following Pennsylvania regulations are relevant and appropriate requirements for this operable unit remedial alternative: 25 Pa. Code Sections 264.90(i) and (j) and 264.100(a)(9). These Pennsylvania regulations generally require remediation of contaminated ground water to background levels. While EPA expresses no opinion herein as to whether applicable or relevant and appropriate requirements apply to a no-action remedial alternative, EPA notes that the selected no-action

alternative will in fact achieve a reduction in contamination through natural attenuation to background levels. Based on the historical pattern of attenuation at the Site, all contaminants will reach background levels within the next 15 years. Table 3 depicts the historical rate of attenuation of ground water contamination at the Site. Levels of all contaminants show over 95% reductions from the earliest rounds of ground water sampling in 1982-83.

COMMUNITY INVOLVEMENT

EPA relies on public input so that the alternative selected for each Superfund Site meets the needs and concerns of the community. To assure that the community's concerns are being addressed, there will be a public comment period on the Proposed Plan. During this time, the public is encouraged to submit comments on the Proposed Plan to the EPA. EPA, in consultation with the Commonwealth of Pennsylvania, may modify the Preferred "No Action" Alternative, select another response action, or develop another alternative, if public comment warrants such an action, or if new material is presented. Therefore, the public is encouraged to review and comment on the information presented in the Proposed Plan. Although EPA has proposed a Preferred Alternative, no final decision has been made and all comments will be considered. The alternative selected will be documented in a Record of Decision (ROD) that summarizes EPA's decision-making process.

Site-related documents as well as copies of the site-reports and this Proposed Plan, are available to the public in the Administrative record file located at:

Buffalo Township Municipal Building
109 Bear Creek Road
Sarver, PA 16055

A copy of the administrative record file is also available to the public at the EPA Region III offices, 841 Chestnut Building, Philadelphia, Pennsylvania, 19107.

EPA will hold a public meeting at 7 p.m. on Tuesday, March 8, 1994 at the Buffalo Township Municipal Building, 109 Bear Creek Road, Sarver, Pennsylvania to discuss the Preferred "No Action" Alternative for the Site. Interested citizens will have an opportunity to ask questions and provide comments. The public comment period begins on February 25, 1994 and concludes on March 26, 1994.

Table 3

Hranica Landfill - Natural Attenuation Data

1. Highest Hits from 1982-1983 Data (2 Rounds of Sampling)

	<u>GW-3</u>	<u>GW-4</u>	<u>GW-7</u>
benzene	14	ND	5700
ethylbenzene	10	ND	15000
toluene	42	ND	24700
lead	260	30	220

2. Highest Hits from 1988-1989 Data (2 Rounds of Sampling)

	<u>GW-3</u>	<u>GW-4</u>	<u>GW-7</u>
benzene	<5J	<5J	<5J
ethylbenzene	ND	ND	350
toluene	<5J	<5J	<5J
xylene	ND	6	4400
lead	ND	ND	ND

3. Highest Hits from 1992-1993 Data (4 Rounds of Sampling)

	<u>GW-3</u>	<u>GW-4</u>	<u>GW-7</u>
benzene	ND	ND	3J
ethylbenzene	ND	ND	3J
toluene	ND	ND	ND
xylene	ND	ND	27
lead	8.1	12	7.9

All concentrations are expressed in parts per billion (ppb).
J means the contaminant was present but at a level
below the quantitation limit.

Citizens are encouraged to review Site-related documents and submit written comments to one of the following people:

Lisa Brown (3EA21)
Community Relations Specialist
U.S.EPA - Region III
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-2129

Garth Connor (3HW23)
Remedial Project Manager
U.S. EPA - Region III
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-0676

All comments must be submitted to one of the above people and postmarked on or before March 26, 1994.

**HRANICA LANDFILL SITE
GLOSSARY**

Administrative Record: An official compilation of documents, data, reports, and other information that is considered important to the status of, and decisions made, relative to a Superfund Site. The record is placed in the information repository to allow public access to the material.

Aquifer: An underground layer of rock, sand, etc. containing water into which wells can be sunk.

Carcinogen: A cancer-causing substance.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the Superfund amendments and Reauthorization Act (SARA). The Act created a Trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste site.

Endangerment Assessment, or Risk Assessment: A means of estimating the amount of harm which a Superfund Site could cause to human health and the environment. The objectives of the endangerment assessment are: (1) to help determine the need for action by estimating the harm if the site is not cleaned up; (2) to help determine the levels of chemicals that can remain on the site and still protect human health and the environment; and (3) to provide a basis for comparing different cleanup methods.

Ground Water: Water found beneath the earth's surface that fills pores between soil, sand, and gravel particles to the point of saturation. Ground water often flows more slowly than surface water. When it occurs in sufficient quantity, groundwater can be used as a water supply.

Hazard Index (HI): The HI is the measurement expressing the overall potential for noncarcinogenic effects posed by contaminants. The HI is the ratio between the average daily dose of a contaminant received by a human population and the reference dose. An HI greater than 1.0 is characterized as presenting an unacceptable noncarcinogenic risk.

Information Repository: A location where documents and data related to the Superfund project are placed to allow the public access to the material.

MCL - The Maximum Contaminant Level or MCL is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

MCLG: The Maximum Contaminant Level Goal or MCLG is a non-enforceable concentration of a drinking water contaminant that is

protective of adverse human health effects and allows an adequate margin of safety.

Monitoring: Ongoing collection of information about the environment that helps gauge the effectiveness of a clean up action.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The Federal regulation that guides the determination and manner in which sites will be cleaned up under the Superfund program.

National Priorities List: EPA's list of the nation's top priority hazardous waste sites that are eligible to receive federal money for response under Superfund.

Organic Compounds: Carbon compounds such as solvents, paints, oils and pesticides. Benzene, Xylene and Toluene are organic compounds. Some organic compounds can cause cancer.

Parts Per Billion (PPB): For liquids, such as ground water or surface water samples, ppb is based on volume. For example, 5 ppb is 5 parts of contaminant mixed with a billion parts of water.

Record of Decision (ROD): A legal document that describes the final remedial actions selected for a Superfund Site, why the remedial actions were chosen and others not, how much they will cost, and how the public responded.

Reference Dose: The reference dose is an average daily lifetime dose believed to be without any adverse effects in human populations.

Risk Assessment (RA): A risk assessment evaluates the carcinogenic and non-carcinogenic risks presented by contaminants at a particular site. Risk is calculated both for current uses and potential future uses of the property by a defined population (i.e., offsite residents).

Surface Water: All waters that are naturally open to the atmosphere including rivers, lakes, streams, and impoundments.

Volatile Organic Compounds: Chemical compounds containing carbon that readily volatilize or evaporate when exposed to the air.